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HOGS IN TEXAS

By

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Introduction.

This publication is not intended to be a complete treatise on swine raising, but the idea uppermost is to give in pamphlet form some of the most successful methods used in hog raising under Texas conditions.

The hog is nothing more nor less than a package in which to put feed. If you have the feed there is usually no more economical way of marketing it than by converting it into pork, but if you have no feed nor any prospect of raising it you certainly have very little use for hogs.

Swine breeding can be made a very profitable occupation in Texas if it is pursued as a legitimate business and not considered a get-rich-quick scheme. It takes a little more thought and study than most kinds of farming and therefore should not be attempted on a large scale by the beginner. One or two good hogs should be acquired and as a knowledge of the business increases the herd will increase, but where it is attempted on a large, extravagant basis by men with no experience, failure is almost sure to follow.

Texas has many advantages as a pork producing state, both in soil and climate. If these natural assets are capitalized to the fullest extent in pork production we will soon be shipping train loads of pork out of the state instead of shipping it in, as we now are doing. Often, however, we take too much for granted. Because our winters are not severe you will usually find the West Texas farmers do not supply their hogs with enough bedding and shelter. We do not use grazing crops for hogs very much though we can excel in this respect.

SELECTION AND HEREDITY

The success of the venture will depend on the breeder's ability to select the right kind of animals for his breeding and feeding operations, more perhaps than on any other factor involved; therefore, this question should receive the greatest attention. It takes practice, and a good deal of it, to develop the ability to judge hogs intelligently. County, state, and community fairs should receive every possible encouragement and hog men should be present when the awards are made so that they may become familiar with the desired types.

There is no quicker way to learn the art of selection than by showing a few of your own hogs. If this is done in an honest effort to learn, and if the exhibitor will be fair and not accuse the judge of unjust partiality, but will endeavor to learn the reasons why the decisions were made, there is no other way that will more indelibly impress on his mind the proper methods of selection.

Modern judging is done almost altogether from the standpoint of utility in pork production. The so-called fancy points are receiving a minimum of consideration and this is as it should be. Do not get the idea that if you are raising hogs for market it will not be necessary for you to know anything about a show hog. A modern prize winner is simply a hog that will dress the greatest number of pounds of the highest priced meat and at the same time will produce this meat the most economically, so far as can be judged from the appearance of the live hog.

If one brood sow is bought and brings an average litter of six pigs twice a year, and half these pigs are females, and they in turn are bred and bring an average of six pigs twice a year, farrowing their first litters at a year of age, and are rebred every six months, over five hundred hogs will be produced in three years. If one begins with good hogs in the breeding herd, the progeny should bring the highest market price; but if a poor selection of breeding stock is made at the beginning, it will be hard to estimate the financial loss during the years following.

The cost of the original breeding stock is a small part of the hog business. The feed cost is the big item of expense that enters into pork production.

Heredity and environment are the two factors that determine every element of a hog, either good or bad. An animal will inherit the characteristics of its forebears and these will be developed or retarded by the environment under which it is kept. The right kind of animals come from the desirable type of ancestors and from proper feeding and care. The pedigree is simply a list of ancestors and affords to men acquainted with the breed an opportunity of knowing whether the animals composing the pedigree of an individual have demonstrated their ability as successful producers.

Inbreeding and linebreeding are the same thing, but differ in degree of relationship. Both mean the mating of animals that are more or less closely related. This practice has been used very successfully by intelligent breeders to stamp a desirable type, but when it has been continued as a practice for a long period of years it has almost invariably resulted in decreased size or decreased fecundity, or in both. Our recommendation is that inbreeding particularly be avoided.

It is customary in the cattle and horse breeding industries to use purebred sires on the native animals in order that the quality may be graded up. This is sometimes done in the hog business and is certainly better than using poor sires, but swine reproduce so much faster than cattle or horses that it is more profitable to get a small start of purebreds and if the good females from this start are kept and cared for, a herd of the highest market value can be developed in a few years.

The mating of animals that are both purebreds but are of different breeds is called cross breeding. These hogs have great vitality, due to the crossing of different lines of blood, and usually make excellent feeders. However, if these cross breds are used for breeding purposes they invariably produce poor offspring. It is inevitable that a farmer will want to keep some of his best gilts for breeding. On this account it is more desirable to start with one of the recognized breeds and keep them pure.

FEEDS AND FEEDING.

Concentrates.

Grains can be classed as carbonaceous or fattening feeds and as protein or bone and muscle building feeds. To build a house the mason must have both bricks and mortar. If he has not the right proportion of each there is much waste. If a hog has too much protein or too much carbohydrates he will certainly not be economically grown. When we say "a balanced ration" we simply mean the relative proportion of growing feeds to fattening feeds that the hog needs.

Some of the commonly used protein feeds on Texas farms are as follows:

Wheat Bran.

Wheat bran can be fed to brood sows with litters, especially if they are fat, but it really has a very low feeding value. It is bulky and is a nitrogenous feed and will be found useful in reducing fat breeding stock. As a fattening feed or as a pig feed wheat bran is too bulky and coarse to be very useful.

Wheat Shorts.

There is no better hog feed than wheat shorts where it is available; especially is this true when fed to sows, suckling pigs and young pigs just after weaning time. We always prefer a mixture of several feeds rather than any one kind and believe that hogs will always do better on a mixed ration, but wheat shorts is very nearly balanced in itself.

Skim and Butter Milk.

Skim milk and buttermilk have about the same feeding value. One pound of either is equal to about one-fourth of a pound of grain when used as a supplement to corn, milo, barley, rice bran, or like feeds, for fattening hogs. When fed to suckling pigs, before or just after weaning, it has a still higher value. It seems to stimulate growth and bone development better than any other feed. More value is gotten out of skimmed milk, if a small amount is fed in connection with a good deal of grain, to a number of hogs, than if fed in large quantities alone or with small amounts of grain. There seems to be no difference in the value of milk, whether fed sour or sweet, so long as one method is maintained. If it is being fed sweet and then is suddenly fed sour for a time or two, scours and other digestive disturbances will follow.

Cottonseed Meal.

No feed has been more discussed by the hog man than cottonseed meal, nor is it yet definitely understood. The known fact about cottonseed meal, however, is that if fed in too large a quantity to hogs it will kill them; that the hogs that do the best on it will die the quickest. When fed at the rate of one part cottonseed meal to six parts corn or milo, it produces very cheap gains and there is very little danger when this is fed no longer than 80 to 90 days to pigs weighing over 100 pounds. When fed this way it has usually been found cheaper than tankage as a corn supplement. It has further been found that it is a very dangerous feed for young pigs just weaned and often will kill them very quickly. It is a safer feed when fed to hogs on a green pasture than when fed in a dry lot. Cottonseed meal has proven splendid when fed, not in excess of one part to six parts of grain, to brood sows that are suckling pigs.

Some think there is an advantage in souring cottonseed meal for hogs. Some tests indicate that there is an advantage in feeding copperas in connection with cottonseed meal to hogs, from the standpoint of eliminating poisonous effects. A stock solution of two pounds copperas dissolved in fifty gallons of water is kept on hand. This solution is mixed with the cottonseed meal and grain just before feeding, at the rate of one-half gallon of the solution for every pound of cottonseed meal fed.

Peanut Meal.

Peanut meal analyzes about the same as cottonseed meal and will prove about as effective as hog feed. Peanut meal will produce a soft quality of pork if fed in too great a quantity, but on account of its very high protein content it need never compose more than one-third of the ration, and for fattening hogs one part peanut meal to five parts corn or milo chops is about right. In this proportion there is no danger of it effecting the quality of the meat. One advantage of peanut meal over cottonseed meal is that it can be fed indefinitely without danger of poisoning. Peanut meal is low in ash and mineral matter and has been found not quite as good a bone developer as some of the other protein feeds.

Tankage or Meat Meal.

Tankage is a packing house by-product that contains from forty to sixty per cent protein and is high in mineral matter. It is a splendid

supplement to corn, milo, or rice bran, when fed at the rate of nine parts grain to one of tankage. This is also a splendid feed for growing young stock and for brood sows, but should rarely be fed in greater proportion than one part of tankage to eight or nine parts of grain.

Fish Meal.

Fish meal is a splendid hog feed that is just being put on the market for the first time. It is a by-product of the fisheries and analyzes about sixty per cent. protein and sixty per cent. ground bone. A number of states have just completed experiments comparing it with tankage as a supplement to corn, milo and barley, and without exception it has proved to be a little more profitable. It is also expected to prove valuable in maintaining size and vigor in breeding stock on account of its high mineral content. Fish meal that has been dried down below an eight per cent. moisture content keeps indefinitely and should be fed and handled about like tankage.

Cowpea Meal.

Cowpea meal is being used to some extent as a hog feed, but thus far it has had a limited use and the hogs do not seem to take readily to it. It may comprise one-third of the ration when fed with such feeds as corn, milo chops, etc.

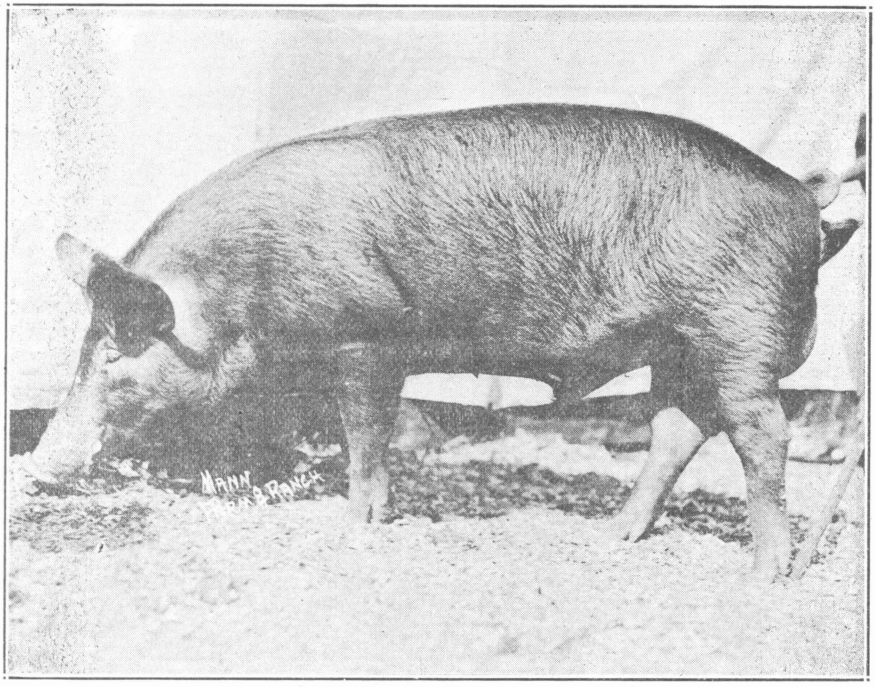
Alfalfa Meal.

Alfalfa meal is being used some as a hog feed and has nearly the feeding value of wheat bran. It has a little more ash or bone building material, but at the same time has considerable more indigestible fibre and is therefore fed principally to brood sows and stock hogs because is is so bulky that fattening hogs can not eat enough of it to make the most economical gains. Many of the prepared hog feeds have alfalfa meal as their base.

Some of the generally used fattening carbonaceous feeds are:

Corn.

Practically every farmer in Texas knows the feeding value of corn and all agree that there is no grain that is better for fattening hogs. Corn is misused sometimes in that it is overfed and fed without anything to supplement it. Since corn is very high in carbohydrates it should always be supplemented with some feed high in protein and mineral matter for the most economical results, even with fattening hogs. The full value of corn can not be obtained when it is fed alone. A given number of pounds of corn will make the greatest amount of gain when fed to hogs weighing from 150 pounds to 200 pounds, if it is ground fine. This increased value is about five per cent. greater than when the same amount of grain is fed on the ear. Whether it pays to grind it or not depends on the value of the corn and the cost of grinding. Ear corn will give greater returns ordinarily than shelled corn. It is supposed that this is on account of the fact that pigs have to eat the ear corn slower. If corn is shelled it should then be ground, except for pigs weighing under 100 pounds. Young pigs can use it equally well when it is shelled or ground. The older and fatter a hog is, the greater the advantage in grinding the corn.



Champion Tamworth Boar, National Swine Show 1918.

Kafir, Milo and Feterita.

Kafir, milo and feterita have about the same feeding value and all make splendid hog feeds. Yields of about twenty per cent. greater are obtained by threshing and grinding these grains rather than feeding in the head or feeding without grinding. When fed in the head a great many grains are worked into the ground and lost and a great deal of it passes through the hog without being digested.

Rice Bran.

Rice bran is being used more and more by the Texas hog men. The Texas Experiment Station found it almost as valuable as corn for fattening hogs. For best results rice bran should compose not more than half the ration and then should be supplemented with a high protein feed. Rice bran contains a great deal or crude fiber and is therefore not as good for young pigs as some of the more concentrated feeds. Rice polish is a very good feed and much more concentrated than rice bran. It can be fed with rice bran very successfully but will cause scouring if fed in too large amounts to hogs that are not used to it.

Rice.

Rough rice has never given very satisfactory gains for hogs. The by-products, rice bran and rice polish, however, have given good results. When rough rice is fed to hogs it should be ground.

Barley.

Barley is a feed that is proving more and more popular in Texas. It is nearly as good as corn for fattening hogs and is better as a growing feed. Barley is very hard and must be ground, rolled, or soaked, in order that it may be profitably used as a hog feed.

Oats.

Oats is a splendid hog feed that has not been appreciated by the Texas hog man. This feed should never be fed in a slop with other feeds or in any wet form, unless it is ground. If fed whole and wet the hog swallows it without proper chewing and it does him very little good. Oats has proven very satisfactory fed dry and whole in a self feeder, as then the hog can get as much as he wants and will eat only a little at a time and will chew it very well. Oats can also be fed very successfully whole and dry, if scattered thin on a cement floor or other hard surface. The idea in oat feeding is to make the hog chew the oats thoroughly. Oats is almost a balanced ration in itself and will be found especially valuable for growing breeding stock. On account of its bulkiness oats does not prove satisfactory in making quick gains on market hogs.

Wheat.

Wheat has a little higher feeding value than corn and when it is cheap enough it will be found a very satisfactory feed. It is better fed ground than whole.

Peanuts.

There is no feed known that will produce more pounds of pork on as few pounds of grain than peanuts, and when the hogs are allowed to harvest the nuts and eat the top forage, remarkable results have been obtained. On much of the sandy lands of Texas peanuts will produce annually splendid crops on land that is too light to grow profitable corn. The Spanish variety is the kind that yields the heaviest and will stand the most drouth. Peanuts contain certain quantities of both proteins and fats and though it is certain that they will make a soft flabby quality of pork, they are such a very good hog feed and are so economically grown in many sections that they will always have a place in Texas pork production, if only for the use of the breeding stock and pigs.

Commercial Feeds.

The value of a commercial stock feed depends entirely on the amount and quality of the different ingredients that go into it. Some of these feeds which are principally the by-products made in the manufacture of human foods, have a place in the economical ration. Most mixed hog feeds are better than any single one feed. The variety seems to stimulate the appetite and help assimilation. When the variety is the sole value of a commercial feed, then the swine breeder can usually do the mixing cheaper than he can have it done by the feed companies, but when a commercial feed is one that is used to save by-products it is often worth the price asked.

PASTURE AND GRAZING CROPS

Though hogs have a small digestive system and are considered principally as consumers of concentrates, still for their best development they should have as much good green pasture as they will consume. Not only will the green feed help to make them healthier and better animals, but it can be used to cut the grain cost in half. Most of Texas has such a mild climate that there is no reason why our hogs should not have some green feed every day in the year. It has been proved by repeated experiments and by the experiences of hog men in Texas that hogs can ordinarily be produced at half the cost where pasture is supplied in abundance, rather than where the hogs are fed in a dry lot. In fact, we doubt if it will be profitable for a man to attempt to raise hogs in Texas without supplying pastures for them. This is one big advantage we have over the northern states in pork production and we should certainly make full use of it. If there is any way possible for us to make the Texas hog man appreciate the vital importance of pasture crops in economical pork production we would feel that we had taken a long step forward in putting Texas permanently in the hog business.

Pasture crops that are well adapted to Texas are:

Alfalfa.

There is no pasture crop that equals alfalfa where it grows successfully. Hogs like it. It has a very high protein and mineral content, and in good seasons, if used with a little grain, it will produce from four to seven hundred pounds of pork per acre. Where possible, alfalfa should be planted as a hog pasture and when not planted too thickly and properly inoculated, its area of production can be spread a great deal.

Sudan Grass.

Where alfalfa can not be grown we believe Sudan grass is one of the best summer hog pastures obtainable for Texas. It is not a legume, but nevertheless contains a great deal of protein and is very nutritious. Sudan grass stands a great deal of drouth and hot weather and the hogs eat it greedily until it grows too old and tough, then it can be mowed for hay and a new tender growth will start out at once.

Sorghum.

Sorghum is the staple summer green crop for Texas hogs. It is usually fed as a soiling crop, because if the hogs are turned into it they cut down a great deal more than they eat and as soon as this dries a little the hogs do not like it very well. It's chief value is to furnish succulent feed.

Bermuda.

Bermuda is grown extensively throughout eastern sections of Texas and makes an excellent permanent pasture crop, since it has a large carrying capacity per acre and can withstand drouth. This crop is grown generally from root cuttings. Bur clover seeded in Bermuda pasture affords both summer and winter grazing. Bermuda is not very high in protein and therefore should be supplemented with feed rich in protein as well as with some grain.

Cowpeas.

Cowpeas may be either planted alone or in corn at the last cultivation. They make a good pasture crop for hogs and when supplemented with carbonaceous concentrates produce economic gains. Being high in protein and mineral matter they are an excellent crop for young growing pigs. The Groit and Brabhan varieties have given excellent results for Texas conditions, although the Whippoorwill and other standard varieties may be used. They are generally grazed until the first peas begin to ripen. Cowpeas yield the greatest return when pastured in conjunction with the feeding of corn, milo, etc.

Barley.

Barley is a splendid grazing crop for hogs. It does not winter kill as easily as oats and therefore is better adapted than the latter to north Texas conditions. In most parts of the state it produces more grazing than rye or wheat.

Oats.

Oats has given excellent results as a grazing crop for hogs. It is the most popular of all the cereal crops for grazing hogs in south Texas, and should be more generally used, especially in those sections where there is little danger of winter killing. Like wheat and rye, oats should be supplemented with grain feeds.

Rye.

This is an excellent grazing crop for hogs and due to the adaptability, is used more extensively than wheat as a grazing crop for Texas conditions. It will stand more cold weather than any other pasture and we recommend it for those sections where the other winter pastures freeze.

Wheat.

Wheat is used sometimes as a grazing crop for hogs, where it is planted as a grain crop, but does not furnish nearly as much nor as good pasture as oats, barley or rye.

Bur Clover.

Bur clover is a valuable grazing crop either when grown alone or when sown in a permanent pasture. It may be sown broadcast in September. Liberal seeding should be practiced. It can be pastured during the winter and spring months. Being a legume, it is high in protein. Bur clover is splendid to plant on Bermuda sod and this combination makes a permanent pasture almost throughout the year.

Sweet Clover.

This crop was formerly regarded as a weed, but in those sections where it will grow, it is now regarded as an excellent grazing crop for hogs. It will do best on soil rich in lime, but will grow in soil so poorly drained and low in humus that the other clovers will not live. The crop should be thickly seeded to prevent the stems from becoming woody. As it matures it should be cut about six inches above the ground, since the new shoots grow from the stem instead of the crown as in the case of alfalfa. There are two varieties of sweet clover—the yellow and the white. The white variety is the more generally used.

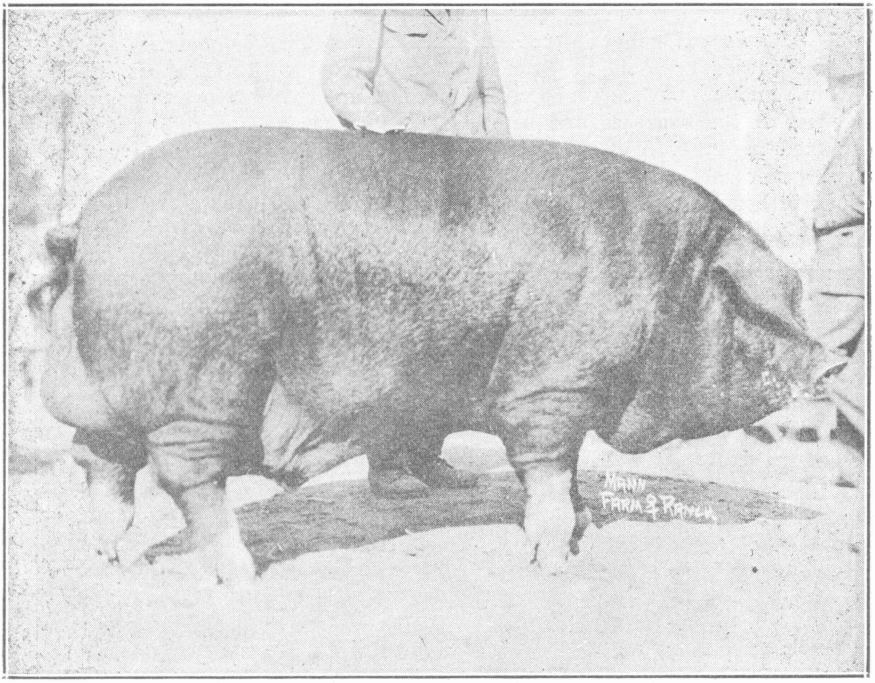
Sugar Beets and Mangel-Wurzels.

Sugar beets and mangel-wurzels have given excellent results as feeds for brood sows and young growing pigs. They are especially valuable

for feeding in bad weather and in the winter when green grazing crops are not available. Due to their succulent nature they are an excellent feed for sows suckling pigs. They are too bulky to be of much use in the fattening ration. Since a tremendous tonnage of them can be raised on rich, loose, loamy soils, we believe that their use will materially increase with time.

Sweet Potatoes.

Hogs like sweet potatoes, but they have a very low feeding value and will not give the pork returns per acre on the same kinds of soils as will peanuts. It is doubtful if it will prove profitable to plant sweet potatoes, especially as a hog crop, but if this is done certainly one of the large yielding varieties should be used. The culls and unsaleable potatoes may be fed to the hogs at a profit.



Grand Champion Poland China Boar, National Swine Show 1918.

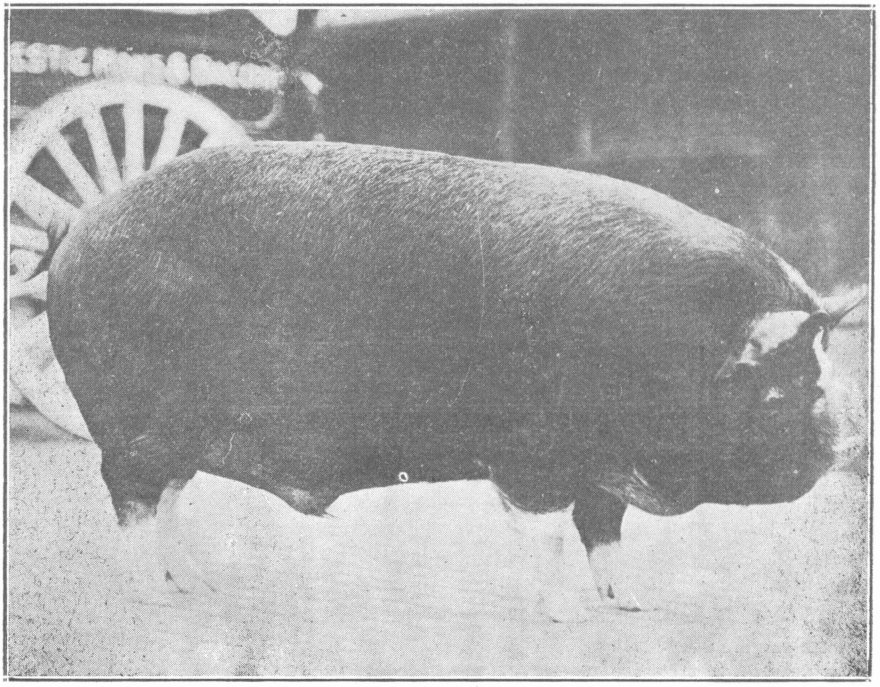
THE HOG'S HEALTH

Mineral Matter.

Grain feeds fed to hogs are usually high in protein or in carbohydrates or in both, but few feeds contain a sufficient amount of mineral matter, especially of phosphorus and calcium, for best results in producing growth. The legumes are high in calcium, while skim milk and tankage are high in phosphorus. It will always pay the hog producer to have a mineral mixture before the hogs so that they may have access to it at all times. The following mixture may be used:

Charcoal	2 bushels
Hardwood ashes	2 bushels
Salt	15 pounds
Air-slacked lime	10 pounds
Sulphur	8 pounds
Pulverized copperas	3 pounds

The charcoal should be broken up and mixed with the ashes. The salt, lime and sulphur should be mixed together and this mixture thoroughly mixed with the charcoal and ashes. The pulverized copperas can then be mixed in either dry, but preferably by dissolving the copperas in warm water and sprinkling this over the mixture. This mixture may be put in boxes or troughs under cover where the hogs may have access to it at will.



A Champion Berkshire Barrow.

RATIONS FOR BOARS, SUCKLING SOWS AND GROWING BREEDING STOCK.

It is desirable to make as much growth as possible on breeding stock and to keep your boars and sows in good healthy condition, but it is neither profitable nor advantageous to get them too fat. We give herewith a few rations that could be used, in order that you may get an idea of what we mean by the right kind of feed for this type of hogs. We give only a very few of the many possible combinations of feed that could be used equally as well.

1. 50 per cent ground barley or ground corn.
   25 per cent ground oats.
   25 per cent wheat shorts.

To be fed hogs on Sudan grass, rape, alfalfa, barley or oat pasture.

2. 50 per cent ground milo maize.
   50 per cent shorts mixed with an equal number of pounds of skim milk.

To be fed hogs on Sudan grass, rape, alfalfa, barley or oat pasture.

3. 50 per cent ground maize.
   40 per cent whole oats—fed in self feeder or scattered on a hard surface.
   10 per cent tankage or fish meal.

To be fed hogs running on cowpeas, Sudan grass or alfalfa pasture.

4. 70 per cent ear corn, or ground corn.
   25 per cent peanut meal.
   5 per cent tankage or fish meal.

To be fed hogs on Sorghum cane pasture.

RATIONS FOR FATTENING HOGS.

It is desirable to make the pigs being fattened eat all they possibly will, because when on heavy feed the relative cost of the maintenance ration can be materially lowered.

1. 75 per cent ground barley or corn.
   25 per cent peanut meal.
2. 45 per cent ground corn.
   45 per cent ground milo.
   10 per cent tankage or fish meal.
3. 45 per cent ground corn or milo chops.
   40 per cent rice bran.
   15 per cent cottonseed meal.

To be fed not over 90 days.

There are many other combinations that are just as satisfactory and the feeder should be governed largely by prices of the feeds available.

Worms.

The principal parasites that affect hogs are intestinal worms and lice. Intestinal worms are usually more the result of getting pigs stunted or keeping them under bad conditions than they are a primary trouble. If the mixture of lime, copperas, ashes, charcoal, and sulphur, is kept before young growing pigs and if they are kept in strong, thrifty, grow-

ing condition, you should have very little trouble from worms; but if the pigs are neglected and stunted and no mineral mixture is kept before them it is more than likely that they will become infested with worms. Especially is this liable to occur if they are in a pasture that has had hogs on it for a number of years.

A mixture of Santonin and Calomel is the standard remedy used for the eradication of intestinal worms. It is customary to give this in doses of about 5 grains of Calomel and 5 grains of Santonin in one dose, to pigs weighing from 50 to 100 pounds each. Better results will be obtained if the pigs are starved for twenty-four hours before being treated, and where it is possible, we think it advisable to catch each pig and put the desired amount of medicine in its mouth. Where pigs are treated in large bunches the Santonin and Calomel are usually fed in a thin slop. The danger with this method is that the pigs that need the medicine the worst are usually the poorest eaters and the heavy eaters usually are not so badly infested.

There are worms that infect hogs, such as lung worms, kidney worms, etc., that are more difficult to remove, but fortunately they are much less common than the ordinary intestinal worms that are easily removed with the Santonin and Calomel treatment.

Lice.

Lice are very easily killed with oil or any of the common coal tar dips, but the difficulty is to keep the hogs from becoming reinfested. The use of ordinary crude petroleum, as it comes from the wells, is a very satisfactory method of controlling lice. It can either be applied with a brush or an old broom, after the hogs are crowded together in a small pen, in which event the hogs will rub against each other and thoroughly spread it to all parts of their bodies, or it can be applied by putting a few gallons on top of water in a dipping vat and the hogs run through this dip. In the summer time when hog wallows are in use, a little crude oil, applied on the top of the wallow water, will answer the purpose very satisfactorily. Any coal tar dip can be applied in a similar manner, or can be sprayed on.

The advantage of crude oil over the coal tar dip is that the crude oil is usually cheaper and that it stays on for a longer period of time, and when the hogs go to their beds that are infested with lice they have a tendency to smear the oil around and kill the lice out, while the ordinary dip quickly evaporates and when the hog lays in an old nest he becomes reinfested with lice. Lice are certainly treacherous in that they will come back in a few weeks after they have been apparently killed out, and it is therefore necessary to treat hogs for lice about once a month.

Cholera.

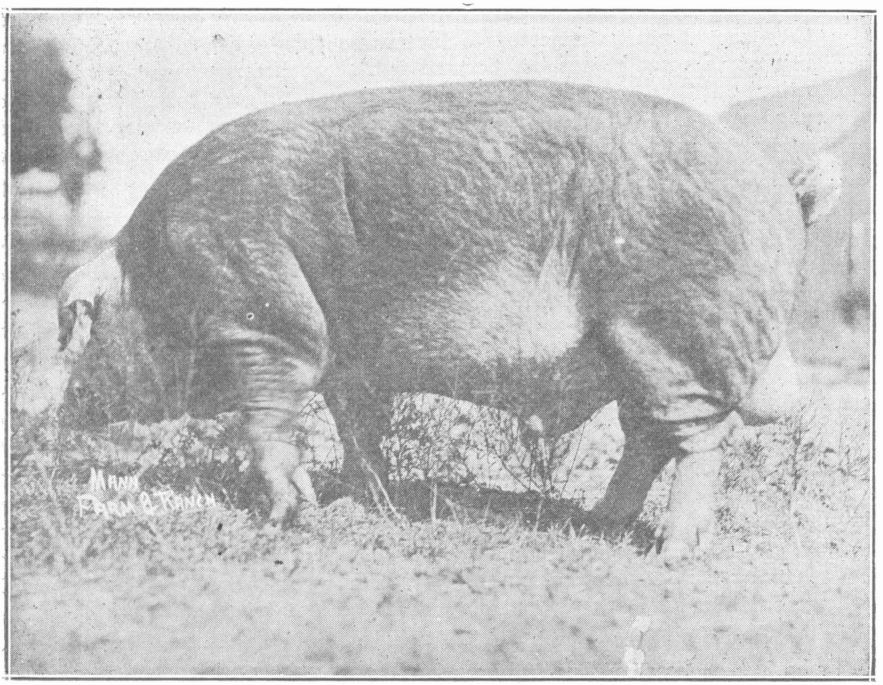
Cholera and Swine Plague, or Hemorrhagic Septicaemia, are the two principal Texas diseases affecting hogs and our advice would be whenever there is any chance of these deadily diseases being present for the owner to promptly wire Inspector in Charge Hog Cholera Control, 602 Flatiron Building, Fort Worth. This inspector has charge of employees of the Bureau of Animal Industry, located in all principal hog raising districts of Texas and these men are there to be used and called on in

the control of hog diseases. Their services are free, but they can not be expected to inoculate the hogs of every man with serum that wants them inoculated, because their time is necessarily limited; but they will diagnose the trouble for you and see that you can get proper veterinary service.

BREEDING STOCK.

The Boar.

A great deal depends on the care and attention given the head of the herd and generally very little thought or consideration is given him. He should have good shelter and a dry place to sleep, and should by all means be allowed plenty of exercise. Often a boar is hard to keep in his lot and so the tendency is for the farmer to put him in a small tight pen and keep him there. This is all wrong. He must be given exercise and kept healthy and vigorous if he is expected to sire large litters or strong, healthy pigs.



A Texas Owned Duroc Jersey of Great Size and Merit.

Give the boar plenty of good feed and if corn is used do not forget to supplement it with feeds high in protein. Dry oats is a splendid feed for him. Give him plenty of clean, fresh water and keep him comfortable. Access to pasture, or green feed cut and thrown over is essential for health and vigor.

A boar should not be used at all before he is eight months old and should be used very little before a year old. Even after he is mature,

many a boar has been ruined from over use. It pays to have more boars and not over do any of them. Keep them in good condition, but not fat. In the summer, for mature boars, it is often more satisfactory to keep them somewhat thin. This does not hurt them as long as they are strong and healthy. Surplus fat is certainly a great handicap to a mature boar in hot weather and should be avoided.

Care of Sow and Litter.

Anyone can fatten hogs after a fashion if he has plenty of feed and has good healthy hogs, but it takes a real good man to raise good big litters of strong husky pigs. The care and management of the sow before and immediately after farrowing is the factor that decides the fate of the future porkers, and the breeder that is thoroughly capable in his ability here is on the road to becoming a successful hog man.

There is considerable difference of opinion as to the right age at which a sow should be bred. Some think eight months old is the proper age to breed, while others like them to be at least fifteen. Certainly they should not be expected to farrow under a year old and if they farrow at this age they must be well fed. Two litters a year can be easily raised in Texas if the breeders will prepare to give the fall litter good shelter and bedding. If a gilt farrows at one year of age she should raise but one litter the first year. She should be given time to grow and develop well before being bred again.

After the sow is bred she should be fed a good, strong, raw ration that contains plenty of protein and should be given plenty of exercise. Under no condition should the sow be allowed to get too fat before farrowing. Flabby fat will certainly cause trouble. Many pigs may be overlayed on this account and the sow will not do nearly as well as if she were in good condition, active and alert, and her muscles hard.

If care has been used in keeping the service dates the time of farrowing will be definitely known and the sow can be put in a pen a week prior to the arrival of the pigs and can be fed light, cooling feeds, such as wheat bran. It is also advisable to see that she does not become constipated as this is sure to cause trouble. A teaspoonful of Epsom salts, fed once a day for several days, will remedy constipation and many successful pig raisers make it a practice to give each sow a dose of Epsom salts a few days before farrowing. This certainly will not hurt them if given in small amounts and may save a lot of trouble.

Get the sow in a warm dry place before she farrows and see that she has enough bedding to make her comfortable but not enough to make it dangerous that the pigs will get under it and be overlayed. Give her plenty of water before and after farrowing and though it is a mighty good idea to watch her closely at farrowing time, it is very important for her not to be disturbed any more than is absolutely necessary to give her and her litter any needed attention. If the weather is cold, it may be a good idea to take the pigs away and put them in a warm dry basket until the sow has finished farrowing and then put them back with her. When the weather is mild this will hardly be necessary. Sometimes the little pigs fight each other, or cut the sow's teats, and it is desirable to break off the tusks on the side of the pig's mouth. This is more often

necessary in big litters in hot weather when blow flies are liable to lay maggot eggs in any little cut on the pig's mouth.

After the sow gets through farrowing give her a drink of water and see that she and her family are perfectly comfortable. For the next twenty-four hours give her nothing at all to eat, but all the water she will use, and disturb her as little as possible. When feeding is recommenced start with a very light feed for the first few feeds and gradually increase this as the pigs will stand an increased flow of the mother's milk. It is essential that the pigs be watched very closely at this time so that one can judge the proper amount of feed to give the mother. After ten days or two weeks the sow can be put on about full feed and it certainly does pay to feed the sow with a litter all she can use profitably. The pigs make their cheapest gains while suckling and it is very desirable to give them as good a start as possible before weaning.

Should the tail or ears become chapped, see that the sleeping quarters are kept dry and grease the affected parts with a little carbolated vaseline. If this is not attended to the tails are liable to drop off.

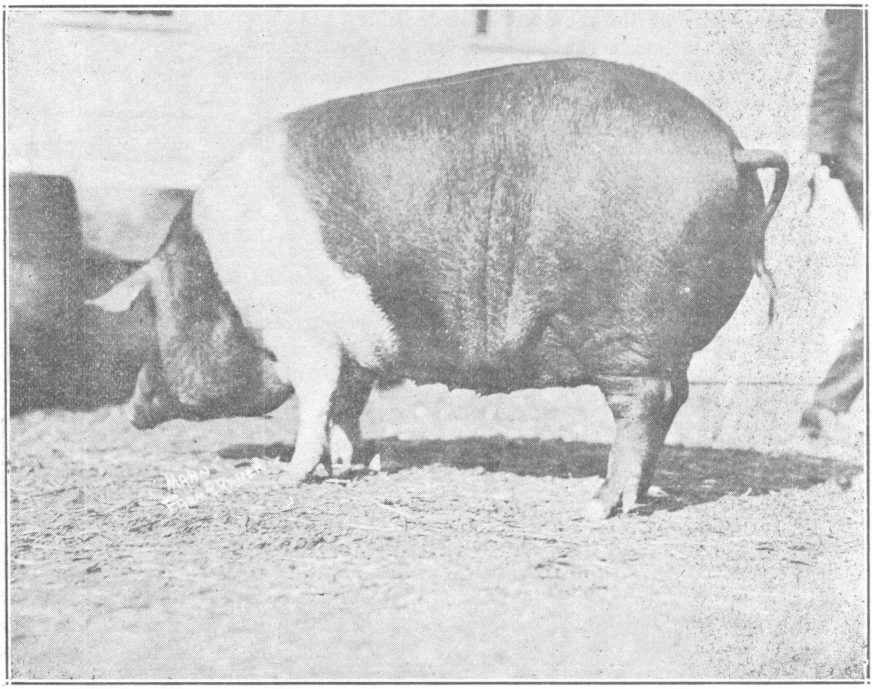
If you can get the sow and pigs out on a green pasture they will certainly do better than on a straight dry-grain ration. They will keep in better health too, due to the exercise and the laxative effect of the green feed.

Pigs must get exercise too, because it they do not and are eating well they are pretty apt to get the "thumps," which usually prove fatal.

Get the little fellows to eating as soon as you can. One of the best methods is to put a self-feeder inside of a little creep so that the pigs can get to it at will, but the old sow can not get at it. In this way the pig gets just what it wants and will gradually eat more and more until by weaning time it is eating so heavily that it will not miss its mother's milk at all. Whatever method is adopted in feeding your young pigs see that they do not have stale, sour feed left in their troughs.

If the pigs are accustomed to being fed before weaning they start off eating after weaning and show little desire, after the first day or two, for their dam. Pigs should not be weaned before eight weeks and ten or twelve is better. It should be borne in mind that there is no food for growing animals that can replace milk. If two litters are raised each year, pigs should be weaned at about ten weeks of age. At this time they should be fed a ration that contains a fair amount of protein and mineral matter, since growth and not fat is what is desired. It is preferable to feed the grain dry. In addition to the grain feeds, some grazing crops should be provided for them. It is best so far as possible, to wean and feed pigs by litters, but this is sometimes not practicable, in which case pigs of about the same size and age should be run together and for best results should never be allowed to run in lots of more than fifteen or twenty. The runts should be separated and fed to themselves. Pigs should be castrated as early as possible; the younger the better. Possibly the best time is two or three weeks before weaning or just after weaning. At about three or four months of age the boar pigs and gilts that are to be kept for breeding purposes should be separated

from the rest of the pigs and fed to themselves. Care should be taken to see that the pigs get enough feed and all the clean water they can drink; provided with clean quarters; have an abundance of shade and are kept free of lice. It is during the growing period that the pig makes its most economical gains and everything in the way of feed, care and management should be provided to afford these gains.



Champion Hampshire Sow, National Swine Show 1918.

Herd Record and Marking for Identification

Careful records should be kept in the breeding herd as to service records, farrowing records, and sales. These should be kept in a permanent form by the breeder of registered hogs because occasion arises from time to time when it is necessary to look upon the sales and breeding of animals which may have been disposed of several years previously.

A breeder of purebred animals should leave nothing to memory, and since the purebred business is based upon the integrity of the breeders engaged in it, everything possible should be done to keep careful, accurate records.

It is best to mark pigs for identification as soon as possible after farrowing; certainly by weaning time. Probably the most satisfactory method is by means of notches in the ear to identify the litters and by metal ear tags or buttons for identifying the individuals.

Each litter can be numbered in the order in which it comes by letter; certain notches in the ears standing for certain numbers. For instance, assign the following values to notches cut in the ears of hogs:

1 notch, upper rim of right ear----------10
1 notch, lower rim of right ear---------- 1
1 notch, upper rim of left ear----------30
1 notch, lower rim of left ear---------- 3

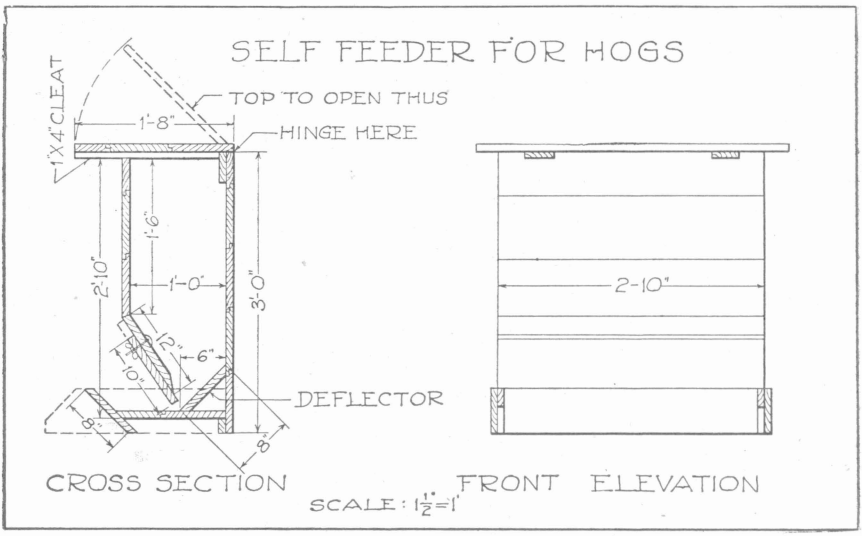
Thus twenty-five would be marked as follows:

2 notches, upper right ear (10x2—20);
2 notches, lower right ear (1x2—2), and
1 notch, lower left ear (3x1—3).
Total—25.

A common leather harness punch can be used or a special punch for this purpose can be secured from Stockmen's Supply companies.

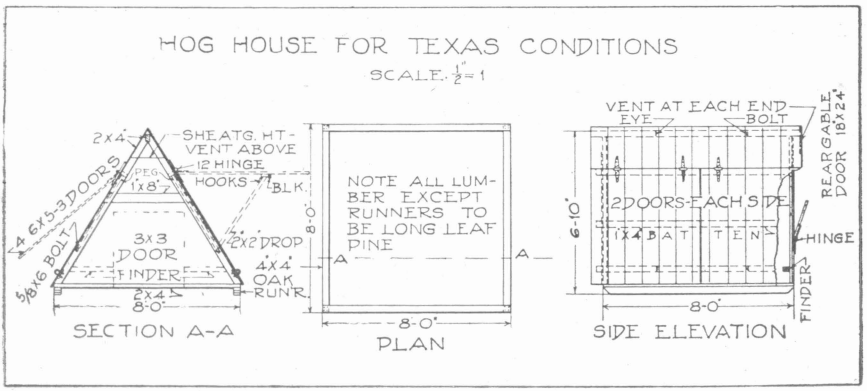
SELF FEEDERS.

Self feeders have produced as economical gains as hand feeding, when plenty of water has been kept available for the hogs and when a number of feeds have been used in the feeder, so that the hog can select the amount of each feed he wants. Corn should never be used in the self feeder unless it is properly supplemented with other grain feeds. The self feeder is especially recommended in starting young pigs to eating grain during the suckling period, but when allowed to remain on the self feeder too long they become too fat and finish too quickly for the greatest development of growth. Therefore, pigs intended to be kept as breeders should be taken off the feeder when they weigh about 60 pounds and then hand fed. The self feeder affords a good method of feeding oats to hogs and their use is recommended when the precautions named above are observed. The following type of self feeder has given good results.



HOUSES.

The following type of portable house is recommended for Texas conditions because it can be economically and quickly built and also provides by hinged doors on the sides, a method of ventilation and shade for the hogs. We recommend that no floor be built in this house but it should be moved as often as is necessary to prevent dust accumulating in the house, which will occur if the house is allowed to stand in one place too long.



CONCRETE HOG WALLOW.

A concrete hog wallow 8'x10' may be made as follows: On nearly level ground, make frame of two 1"x12" ten feet long, and one 1"x12" eight feet long, and one 1"x16" eight feet long. Fasten firmly together, being careful to drive stays every two feet to prevent spreading. See that top is level; lower side must be dug in four inches.

Make excavation in lower end of rectangular enclosure five inches deep, pile and tamp dirt around other three sides so there will be a regular slope of eight inches from these sides to the center of lower side.

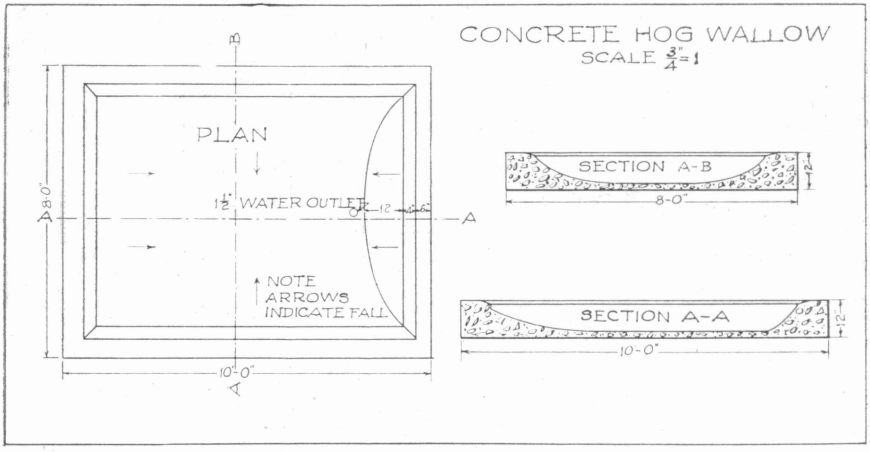
Nine sacks of cement (nine cubic feet or one-third cubic yard), one cubic yard sand, and one cubic yard of gravel or crushed rock will be required. Mix cement, sand and rock in proportions of 1:3:3.

Apply concrete four inches thick for floor, being careful to get slope regular from upper end and sides to lower end. Finish should be rough and slope straight instead of concave, to prevent hogs from slipping.

Pan should now be eight inches deep, sloping from three sides to center of fourth, where four-inch drain pipe is to extend horizontally through wall at base so that wallow may be completely drained and washed. Stop cock or large wooden stopper may be used to retain water.

After floor has begun to "set" make inside form for six-inch curb with two 2"x4" eight feet, eight inches long; one 2"x4" seven feet long; and one 2"x12" seven feet long, with bottom side sawed off so that it slopes from full width at center to four inches at ends. Place in large form on

concrete floor, being careful to leave a six-inch space all around for curb. Fill in to top of 2"x4" and 1"x12" making curb four inches high on inside except on lower end where it is twelve, and a total of twelve inches from outside except on lower end where it is sixteen.



Bank up earth around wallow so that hogs can get in, and so they can not root under. Concrete or board approach may be made to wallow at one side or end.